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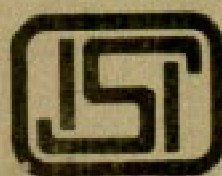
IS : 10013 (Part III) - 1981

Indian Standard

SPECIFICATION FOR
WATER SOLUBLE TYPE WOOD
PRESERVATIVES

**PART III COPPER-CHROME-BORON (CCB)
WOOD PRESERVATIVE**

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SPECIFICATION FOR WATER SOLUBLE TYPE WOOD PRESERVATIVES

PART III COPPER-CHROME-BORON (CCB) WOOD PRESERVATIVE

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Indian Standard
**SPECIFICATION FOR
WATER SOLUBLE TYPE WOOD
PRESERVATIVES**

**PART III COPPER-CHROME-BORON (CCB)
WOOD PRESERVATIVE**

0. FOREWORD

0.1 This Indian Standard (Part III) was adopted by the Indian Standards Institution on 30 November 1981, after the draft finalized by the Timber Sectional Committee, had been approved by the Civil Engineering Division Council.

0.2 With the rapid industrial development of the country, coupled with increased construction activity alround, the demand for timber for construction purposes has greatly increased. In view of the limited availability of naturally durable species, such as teak (*Tectona grandis*) and sal (*Shorea robusta*), it is imperative that supplies of durable timbers are augmented by selected timbers of lesser durability which, when suitably treated, would give increased life under service conditions. Preservative treatment of timber, therefore, forms a very important part of the national effort to conserve the material resources of the country, and to achieve their most economic utilization.

0.3 IS : 401-1982* covers types of preservative, methods of treatment, and the type and choice of treatment for different species of timber for a number of uses. The standard also lists various oil type, organic solvent type, and water-soluble (leachable) and water-soluble (fixed) type preservatives. The efficiency of preservative treatment depends, besides the proper choice of preservative and the treatment process, on the quality of the preservative to ensure required absorption and penetration of the preservatives. This standard has been formulated to lay down requirements of Copper-Chrome-Boron (CCB)—a water-soluble (fixed) type preservative.

0.4 In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

*Code of practice for preservation of timber (*third revision*).

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0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part III) covers the requirements for copper-chrome-boron—a water-soluble (fixed) type wood preservative specified for treatment of timber and other lignocellulosic materials as given in IS : 401-1982†.

1.2 This standard covers the composition of the preservative, quality of chemicals forming the composition, and sampling procedure for analysis.

1.3 The analysis procedures for different ingredients have been covered in IS : 2753 (Part I)-1964‡.

2. COMPOSITION AND PROPERTIES OF PRESERVATIVE

2.1 Copper-chrome-boron preservative formulation shall consist of the following active ingredients in nominal proportions by weight as shown below:

Boric acid	H_3BO_3	18.0
Copper sulphate	$CuSO_4.5H_2O$	35.0
Sodium dichromate	$Na_2Cr_2O_7.2H_2O$	} 47.0
or		
Potassium dichromate	$K_2Cr_2O_7$	

2.1.1 The percentage of any of the ingredients shall be not less than that shown below:

Boric acid	H_3BO_3	15.5
Copper sulphate	$CuSO_4.5H_2O$	32.5
Sodium dichromate	$Na_2Cr_2O_7.2H_2O$	} 44.5
or		
Potassium dichromate	$K_2Cr_2O_7$	

*Rules for rounding off numerical values (revised).

†Code of practice for preservative of timber (third revision).

‡Methods for estimation of preservatives in treated timber and in treating solutions:
Part I Determination of copper, arsenic, chromium, zinc, boron, creosote and fuel oil.

2.2 The preservative may be in a dry solid form, semi-liquid paste or solution.

2.3 In case of dry solid, the preservatives shall contain not less than 95 percent of the active ingredients mentioned under 2.1.

2.3.1 In all cases, the percentage of active ingredients, and amount of moisture shall be labelled on the container as well as descriptive literature of the product.

2.4 Each of the chemicals used for such formulation shall be not less than of 95 percent purity.

3. SAMPLING

3.1 Samples shall be taken from requisite number of drums out of the supply made at one particular time according to sampling procedure laid down in IS : 4905-1968*.

3.2 In case of solution or paste, the same shall be thoroughly mixed with a rod and at least 1 kg sample shall be taken for chemical analysis from each drum.

3.3 In case of dry powder form, a true representative sample of the preservative not less than 10 percent of the contents shall be taken for analysis.

3.4 At least 1 kg of the preservative shall be dissolved to obtain 15 percent solution of the preservative.

3.5 A small amount of the 15 percent solution may be drawn and diluted exactly to 5 percent for chemical analysis.

4. TESTING

4.1 The chemical analysis of the solution with respect to its various ingredients shall be carried out according to 3.4 of IS : 2753 (Part I)-1964†. The proportion of all chemicals shall comply with 2.1 and 2.1.1.

5. MARKING

5.1 Each container shall be legibly marked with the following information:

- a) Manufacturers' name, or trade-mark, if any;
- b) Date of manufacture; and
- c) Percentage of dry active ingredients.

*Methods for random sampling

†Methods for estimation of preservatives in treated timber and in treating solutions: Part I Determination of copper, arsenic, chromium, zinc, boron, creosote and fuel oil.

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5.1.1 The container may also be marked with the ISI Certification Mark.

NOTE— The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

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INDIAN STANDARDS
ON
PRESERVATION OF TIMBER

IS:

- 287-1973 Recommendations for maximum permissible, moisture content of timber used for different purposes (*second revision*)
- 401-1982 Code of practice for preservation of timber (*third revision*)
- 1141-1973 Code of practice for seasoning of timber (*first revision*)
- 1902-1961 Code of practice for preservation of bamboo and cane for non-structural purposes
- 2683-1980 Guide for installation of pressure impregnation plants for timber (*second revision*)
- 2753 (Part I)-1964 Methods for estimation of preservatives in treated timber and in treating solutions : Part I Determination of copper, arsenic, chromium, zinc, boron, creosote and fuel oil
- 2753 (Part II)-1968 Methods for estimation of preservatives in treated timber and in treating solutions : Part II Determination of copper (in copper naphthenate) and pentachlorophenol
- 4833-1968 Method for field testing of preservatives in wood species
- 4873-1968 Method for laboratory testing of wood preservatives against fungi
- 6341-1971 Method of laboratory test for efficacy of wood preservatives against soft rot
- 6497-1972 Method of test for efficacy of preservatives and evaluating the natural durability of timbers used in cooling towers
- 6791-1973 Method of testing natural durability of timber and efficacy of wood preservatives against marine borers
- 7315-1974 Guidelines for design, installation and testing of timber seasoning kilns (compartment type with cross forced air circulation)
- 9096-1979 C. P. for preservation of bamboo and canes for structural purposes